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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/675,195

09/30/2003

Jan Wielsma

WIELSMA 3

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7590

04/06/2004

HITT GAINES P.C.

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EXAMINER

CLINGER, JAMES C

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,195

Applicant(s)

WIELSMA, JAN

Examiner

Jim Vannucci

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 and 34-41 is/are rejected.
- 7) ☒ Claim(s) 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9-30-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-22, 28-29 and 36-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Gibson(4,873,529).

Claims 21 and 36, figure 1 discloses an antenna trace(2) and a ground plane(3) formed on a substrate(1) where the ground plane(3) is non-overlapping with the antenna trace(2), and an air insulation region(4) extending through the substrate(1) between the antenna trace(2) and the ground plane(3).

Claims 22, 29 and 37, the ground plane(3) disclosed in figure 1 is coplanar with said antenna trace(2).

Claim 28, the device disclosed in figure 1 has an antenna trace(2) and ground plane(3) formed on a substrate(1) where the ground plane(3) is non-overlapping with the antenna trace(2), and an air insulation region(4) extending through the substrate(1) and located between the antenna trace(2) and ground plane(3) is created.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23-27, 30-32, 34 and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson in view of Rudish(6,424,317).

Gibson does not disclose an insulation region as recited in these claims.

Claims 23, 30 and 39, figure 1 of Rudish discloses a plurality of insulation regions(26, 28 & 30).

Claims 24 and 31, figure 1 of Rudish discloses each of the insulation regions(26, 28 & 30) being separated by a portion of a substrate(22).

Claims 25, 32 and 40, the insulation regions(26, 28 & 30) disclosed in figure 1 of Rudish extend through the substrate(22).

Claims 26, 34 and 41, the insulation region disclosed in Rudish is a ceramic(col. 7, lines 19-22).

Claim 27, the substrate(1) disclosed in figure 1 of Gibson is lossy and the insulation region disclosed in Rudish causes the antenna radiation efficiency of the antenna to be about -0.5dB or better(col. 7, lines 55-56).

Claim 38, it is obvious that electrical components are mounted on the substrate disclosed in Gibson and interconnected between at least one of the conductive traces and the ground plane to form an operative circuit because the substrate can be a pcb(col. 2, lines 18-25).

The insulator and dielectric arrangement disclosed in Rudish provides improved antenna efficiency(col. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the substrate arrangement disclosed in Rudish with the antenna disclosed in Kaloi to obtain improved efficiency as disclosed in Rudish.

5. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson in view of Rothe(6,204,814).

Gibson does not disclose via and traces on both sides of the substrate.

Claim 35, figures 3 and 7 of Rothe disclose antenna traces(4 & 3) located on opposing surfaces of the substrate interconnected by vias(9) extending through the substrate to feed the antenna.

It would have been obvious to one of ordinary skill in the art at the time of the invention to feed the antenna disclosed in Gibson by a via and traces for a smaller device as disclosed in Rothe.

Allowable Subject Matter

6. Claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The limitation that is primarily responsible for distinguishing claim 33 over the prior art is the limitation concerning drilling a hole in the substrate to create an opening.

Correspondence

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (703) 305-0619.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted

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to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 872-9306.



James Vannucci